



WATER INNOVATION PROGRAM:

2018 Call for Proposals

Expression of Interest (EOI) Guidelines

Online submission: email to WIP-2018-OpenCall@albertainnovates.ca

*Deadline: **September 28, 2018, 3:00 PM MDT***

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PROGRAM OVERVIEW

Alberta Innovates

Alberta Innovates is a provincially funded corporation with a mandate to deliver 21st-century solutions for the most compelling challenges facing Albertans. Alberta Innovates does this by building on the province's research and technology development strengths in the core sectors of health, environment, energy, food and fibre, and platforms such as artificial intelligence, nanotechnology and omics.

Alberta Innovates is working with partners to diversify Alberta's economy, improve environmental performance and enhance the well-being of Albertans through research and innovation.

Water Innovation Program

The Water Innovation Program (WIP) from Alberta Innovates is designed to help the Government of Alberta (GoA) achieve the outcomes of the [Alberta Water Research and Innovation Strategy \(2014\): A Renewal \(AWRIS\)](#) and the goals of the [Water for Life Strategy](#): (1) safe, secure drinking water; (2) healthy aquatic ecosystems; and (3) reliable, quality water supplies for a sustainable economy.

The program builds on a history of world class research and innovation, and helps create and apply relevant, reliable and credible knowledge and information that will lead to a high-performing, innovative and responsive water system for the province of Alberta, as called for in AWRIS.

The WIP research portfolio supports investments that advance knowledge and innovation in four key theme areas:

Theme 1: Future water supply and watershed management:

The ability of headwaters to continue to provide a stable water supply to Alberta's river systems and watersheds in the coming decades is changing and needs to be clearly understood and quantified. Irrigation-based agriculture in southern Alberta depends on water availability in the Southern Saskatchewan River Basin, and the oil sands industry heavily relies on the Athabasca River. Availability of water in these basins will impact Alberta's economy. Climate change adds another dimension in water supply and management. It can increase the frequencies of extreme weather conditions such as drought and flooding. Watershed management becomes more critical with unstable and less predictable water supply and needs to use a holistic perspective to carefully balance competing needs.

Theme 2: Healthy aquatic ecosystems:

Aquatic ecosystems provide important habitats for wildlife and fish while offering opportunities for human use and recreational development on Alberta's water bodies. Alberta's growing population and economy, coupled with increasing impacts from a variable climate are impacting the health of aquatic ecosystems. These impacts need to be understood and managed.

Theme 3: Water use conservation, efficiency, and productivity:

Improved conservation, efficiency and productivity (CEP) of water can significantly reduce Alberta's water footprint across all sectors: agriculture (irrigation), municipal, and industry. In irrigation and oil sands in situ recovery (SAGD), significant improvement in CEP has been made in the last decade. Yet, more progress can be done in these areas. A greater effort needs to be made in municipal water use, oil sands surface mining, and power sectors.

Theme 4: Water quality protection:

Safeguarding Alberta's water supplies will require an improved understanding of the distribution and occurrence of pathogens and contaminants (including metals, pesticides and other organic contaminants) in both surface and groundwater. While large urban areas are currently well served by their drinking water and wastewater treatment systems, aging infrastructure and a rapidly growing population will continue to put pressures on these systems. Rural Albertans and Indigenous communities are in critical need of a focused approach to their unique water security issues.

CALL FOR PROPOSALS SCOPE

This Call for Expressions of Interest (Call) is inviting project proposals to be evaluated in a competitive funding process. The process is divided into two stages: the Expression of Interest (EOI) stage and the Full Project Proposal (FPP) stage. These instructions provide information about the EOI stage only. Information specific to the FPP stage will be available when FPP invitations are made, which will address preparation and evaluation of FPPs for applicants who are successful at the EOI stage.

Note: Questions about the EOI process that are not fully addressed in this document can be sent to vicki.lightbown@albertainnovates.ca.

Focus Areas

This Call is seeking innovative knowledge generation and technology development projects that address Alberta's water challenges. **Knowledge generation projects** inform policy or regulation, develop best management practices and/or create tools and knowledge to support decision making. These projects can also be classified as applied research. **Technology development projects** advance a technology along the Technology Readiness Level (TRL) scale towards a commercial product. For this Call, technology development projects should be at bench scale demonstration or higher.

Projects will be considered under all four themes of the Water Innovation Program as described above. Objectives or questions of interested in these themes include:

General priorities:

- Holistic approaches to water management.
- Geographic diversity. Looking for application from watersheds across the province.
- Collaborative and transdisciplinary projects. Projects should consider and integrate environmental, economic, social, legal, and regulatory aspects where applicable.
- Projects with strong knowledge translation/commercialization potential.
- Clear line of sight to support AWRIS and/or Water for Life outcomes.

Theme 1: Future water supply and watershed management:

- Understand the current and historical weather and climatic conditions in Alberta, for the purposes of water resource management, resource allocation, emergency response, interpretation, trend and prediction.
- How are forecasted changes in climate expected to affect the spatial distribution of water resources (surface water and groundwater) and change quantity and quality? What are the impacts to water users?
- Develop a range of plausible future Alberta weather scenarios to better understand extremes (flood and drought) at a monthly (or shorter) time step.
- Develop adaptive strategies to respond to impacts of climate variability. How do we build flexibility into our water management infrastructure and shift to risk-based approaches?
- Holistic approaches to managing water as a single resource, accounting for interactions between land-use, groundwater and surface water and further exploring the concept of conjunctive management and conjunctive use.
 - Understand interactions between saline/non-saline aquifers.
 - Impacts from use of saline aquifers.
 - Consider vulnerabilities and ecosystem health implications.
- Understand potential drivers behind historical variability in lake water levels.

Theme 2: Healthy aquatic ecosystems:

- Understand the impact of climate variability on changing conditions in freshwater environments and implications for ecosystem health.
- Understand if the use of different spatial and water chemistry metrics could be used to enhance lake/reservoir/canal vulnerability mapping to improve early detection of aquatic invasive species and rapid response. Are there spatial patterns and historical trends in existing data that might inform/predict invasive species detection?
- Develop tools and strategies to mitigate impacts of aquatic invasive species.
- Understand and mitigate nutrient loading to Alberta's lakes and rivers. Consider behaviours and land-use incentives.
- Assess the effects of multiple environmental and anthropogenic stressors (including impacts of activities outside of Alberta) and the associated cumulative effects on aquatic receptors. Includes both quantity and quality impacts.
- Protect, conserve and enhance riparian areas.
 - Explore options and incentives to enhance protection on private lands.

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- Cost-benefit analysis of managing riparian areas.
 - Prioritize areas that would demonstrate benefits from this action.
 - Understand and mitigate the fate, behavior and toxicity of bitumen/dilbit, salt water, and wastewater spills in freshwater environments (surface water and groundwater). Develop technical and management solutions/products for key/new pollutants.
 - Understand the impacts of major river infrastructures on key aquatic ecosystems.

Theme 3: Water use conservation, efficiency, and productivity:

- Develop municipal wastewater and stormwater re-use strategies and technologies.
- Understand the long-term impact of municipal wastewater reuse on return flows and stormwater use on groundwater recharge.
- Develop innovative technologies and strategies to reduce industrial fresh and non-saline water use over time.
- Develop innovative technologies and strategies to support agri-food water management and security (non-irrigation agricultural water use). Includes water consumption and water quality issues.
- Develop strategies and tools to help manage the financial model of the infrastructure system (water/waste-water treatment plant, irrigation district, regional water commission, etc.) in a manner that accounts for all costs, including end-of-life replacement.
- Improve analytic and software systems to increase efficiency of storage, analysis, and reporting of data. Includes improvement of real time information accessibility into reporting and decision-making systems.

Theme 4: Water quality protection:

- Develop low cost solutions and strategies to address drinking water and wastewater challenges in small, Indigenous and/or remote communities, including “micro-systems”, non-municipal systems and water co-ops. Understand the availability and vulnerability of the water sources.
- Understand and manage pathogen and contaminant impacts on water supplies.
 - Focus on “emerging” contaminants including pharmaceuticals, personal care products, microplastics and manganese.
 - Develop risk-based monitoring, evaluation and reporting systems.
- Understand and estimate the success of and uncertainty in management practices for reducing non-point source contaminant loads. Improve ability to estimate load reductions.
- Understand the impact of climate variability (flood and drought) on water quality as it relates to human health, agriculture, industrial application, recreation, or other uses.
- Improve understanding of the influence of land use and landcover on surface water quality and develop monitoring/assessment techniques to better understand the drivers behind spatial and temporal variability in water quality.
- Understand risks to water supplies from wastewater lagoons, aging energy infrastructure.
- Support safe release of industrial effluent to the environment, including oil sands process-affected water (OSPW).

Applicants are strongly encouraged to review the list of projects funded through the Water Innovation Program (<https://albertainnovates.ca/funding/water-and-land/water-innovation-program-wip/>) to identify any synergies, overlaps and gaps that may have implications for a new project.

Note: Preference will be given to projects that involve and promote collaboration, knowledge transfer/sharing, and widespread deployment/dissemination potential.

Project Location

All projects supported through this Call must demonstrate a clear and justified value proposition for addressing water challenges in Alberta. Technology solutions can originate from anywhere globally, but must be tested, piloted, demonstrated, or deployed in Alberta. Consideration may be given to projects outside of Alberta where there is a well-justified value proposition and strong support from end users in Alberta. Preference will be given to projects that are led by an Albertan researcher or company.

Eligibility

This Call is open to all categories of lead applicant, including technology developers, industry, industrial associations, small and medium-sized enterprises, R&D organizations, universities, municipalities, not-for-profit organizations, government research labs, and individuals.

Projects or portions thereof that have received Alberta Innovates funding are not eligible to receive further Alberta Innovates funding for the same development. However, applicants may request support for a new phase of development that builds on and sufficiently advances a previously-funded project.

Project Partners and Collaboration

Project partners must include a problem owner, end-user and/or recipient of the generated knowledge/outcomes. Demonstration that discussions are underway is sufficient at the EOI stage. Confirmation of commitment from project partners will be required at the FPP stage.

Collaboration between multiple organizations is strongly encouraged. Collaboration can often represent a strong value proposition by demonstrating opportunities for leveraging knowledge, technology validation, and sharing of results. Applicants should consider adding economic, legal, social and environmental expertise where appropriate.

HOW FUNDING WORKS

Total Funds Available

The total funding available for projects supported through this Call is up to **\$10 million** Canadian Dollars (\$CAD), subject to the discretion of Alberta Innovates and the availability of funds.

Project Funding

The maximum funding request to Alberta Innovates for any one project is **\$750,000 CAD**. Minimum leverage requirements (e.g., additional cash contributions from other project partners) have been set at different amounts for knowledge generation and technology development projects. The EOI response template requires the Applicant to declare what category the project falls under.

Knowledge Generation Projects

The maximum funding request to Alberta Innovates for any one knowledge generation project is **\$750,000 CAD**. The maximum Alberta Innovates contribution to a single project will be no more than **75%** of the project's eligible expenses. Example = for a project requiring \$500,000 cash to support the workplan, the maximum Alberta Innovates contribution would be \$375,000.

There is no restriction on the source of matching funds. An application can be strengthened if matching funds come from an end-user or problem owner.

Technology Development Projects

The maximum funding request to Alberta Innovates for any one technology development project is **\$750,000 CAD**. The maximum Alberta Innovates contribution to a single project will be no more than **50%** of the project's eligible expenses. Example = for a technology development project requiring \$500,000 cash to support the workplan, the maximum Alberta Innovates contribution would be \$250,000.

There is no restriction on the source of matching funds. An application can be strengthened if matching funds come from an end-user or problem owner.

Note: Applicants must justify the amount of funding requested. Alberta Innovates may choose at its sole discretion to award project funding for less than the requested amount.

Eligible and Ineligible Expenses

Alberta Innovates funds expenses directly attributable to the performance of agreed upon projects. All costs incurred must be critical to the performance of the project, as outlined in the application.

Alberta Innovates only funds reasonable costs incurred as defined in the investment agreement after it has been executed.

A summary of eligible and ineligible expenses is provided in Appendix A.

Project Term

The maximum project length for projects funded under this Call is **three (3) years** from project commencement. Projects could commence as early as April 2019 and be completed by May 2022. Timelines for projects may be extended with appropriate justification.

Project Initiation

Projects may commence at any time after the date on which the Applicant is notified that the project has been **approved by Alberta Innovates**. However, no disbursements will be made prior to execution of the investment agreement. Project costs incurred prior to receiving notification of Alberta Innovates' decision will not be considered eligible as matching funds and will not be eligible for Alberta Innovates' contributions. Furthermore, Applicants are advised that project costs incurred prior to execution of the investment agreement will not be reimbursed by Alberta Innovates in the event that an agreement is not executed.

Performance Management and Evaluation

Over the life of a project, Alberta Innovates employs an active project management philosophy, regularly monitoring performance and supporting the Applicant to reach their outcomes. Funding is tied to outcomes, achievement of results and submission of progress and performance reports. For this reason, Alberta Innovates funds on a milestone completion basis. This means the Applicant is expected to complete a milestone and submit a progress report before Alberta Innovates advances the next tranche of funds. Failure to complete performance reporting will impact fund release.

All investment agreements outline the intended outcomes of the program and the corresponding performance indicators (measures) that will be tracked over the course of the project. Specific performance indicators will also be developed at the level of the individual project given the uniqueness of each project. The Applicant is responsible for reporting on all required indicators to Alberta Innovates.

Applicants must clearly delineate the scope of the project for which Alberta Innovates funding is being requested. Any related work completed concurrently or before the project term but outside the scope of the project may be discussed in the proposal but should be clearly indicated as such.

HOW TO APPLY

Submission Deadline

The deadline for submission of EOIs in response to this Call is **Friday, September 28, 2018 at 3:00 PM Mountain Daylight Time**. Late submissions will **NOT** be accepted. Applicants are encouraged to complete their submissions well in advance of the deadline. Furthermore, Alberta Innovates will not accept partial or incomplete submissions. All required content must be submitted via email to WIP-2018-OpenCall@albertainnovates.ca.

Expression of Interest and Full Project Proposal Schedule

The following timelines are anticipated for the full funding process. Note that Alberta Innovates reserves the right to alter or cancel the currently-anticipated process and deadlines.

Action	By Whom	Timing
EOI Submission Deadline	Applicants	September 28, 2018
EOI Shortlist Notification	Alberta Innovates	November 16, 2018
FPP Submission Deadline	Applicants	January 11, 2019
FPP Oral Presentation	Applicants	February 2019
Funding Decision Notification	Alberta Innovates	March 2019

Submission Content

Each submission must consist of the following:

- **Expression of Interest Document:** This document will form the basis of Alberta Innovates' evaluation and must fully address each of the evaluation criteria.
- **Letters of Support (optional):** Letters of support from partnering organizations, funding sources, site hosts, etc.

Applicants must submit the completed EOI form via email to WIP-2018-OpenCall@albertainnovates.ca.

Note: Only the required documents may be provided. Any additional attachments or materials will not be considered.

Submission Standards

An EOI response template will be available at <https://albertainnovates.ca/water-innovation-program-wip/>. Applicants **must** use the response template to ensure that all necessary information is provided in a consistent manner.

The final EOI document must be emailed in PDF format and may be no more than eight (8) letter-sized (8.5" x 11") pages in length, including all text, graphics, and tables. **Any extra pages beyond the limit will be removed from the document and will not be considered by the evaluators.** The document must use Calibri 11-point font with a minimum of 1.0 line spacing. Margins must be no smaller than 2.54 cm (1").

Note: The page limit does not include optional letters of support.

APPLICATION REVIEW PROCESS

During the proposal review process, Alberta Innovates will leverage internal staff and external expert reviewers to evaluate applications submitted. Alberta Innovates retains the sole right to determine the evaluation process and does not disclose the names of its external reviewers to ensure their objectivity and impartiality. All external parties are subject to confidentiality, intellectual property management and conflict of interest policies set by Alberta Innovates.

Note: All investment decisions are at the sole discretion of Alberta Innovates.

Evaluation Criteria

EOIs will be evaluated based on the following criteria:

Criterion	Description	Weight
Opportunity	In this category, EOIs will be evaluated based on the strength of the proposed research or technology, including the scientific basis, innovation, and the expected advancement over the course of the project.	20
Relevance and Benefits to Alberta	In this category, EOIs will be evaluated based on the potential to address a water related challenge/opportunity in Alberta, as well as the fit with investment priorities of the Water Innovation Program, AWRIS and/or Water for Life. Ancillary benefits will be considered.	40
Knowledge Translation and Adoption Potential	In this category, EOIs will be evaluated based on the opportunity for widespread uptake of the research or adoption of the technology in Alberta, and the plan for knowledge transfer/sharing.	20
Project Implementation	In this category, EOIs will be evaluated based on the strength of the project implementation plan, including achievability of the work plan, the plan to obtain financing for the project, the capacity of the project team, and the strength of support from project partners, where applicable.	20

Screening Criteria

In addition to the evaluation criteria described above, projects may be screened out based on one or more of the following factors:

- Inadequate benefit to Alberta;
- Insufficient information provided;
- EOI not written in English;
- EOI not sufficiently readable or comprehensible;
- EOI does not conform to the submission standards;
- Proposed project is inconsistent with the intent or scope of this Call.

Next Steps

Applicants whose EOIs are rated highly, determined to be of sufficient quality, and are well aligned with Alberta Innovates' mandates will be invited to submit a Full Project Proposal. Further information regarding FPP submission, including evaluation criteria and timelines, will be made available at the time the FPP invitations are made.

Applicants whose EOIs are not accepted for FPP invitation will be notified when the EOI review process is completed. Applicants who wish to receive feedback regarding their EOI can set up a short debrief phone call with Alberta Innovates. Information about arranging a debrief phone call will be provided in the notification letter.

Note on Proposal Quality

This is a highly competitive process, and not all projects will be shortlisted. Success at the EOI stage depends on the quality of the EOI submitted. Only the highest quality EOIs will be invited to submit FPPs. In this regard, "quality" means both the quality of the proposed project relative to the evaluation criteria and the quality of the written proposal (clarity, completeness, etc.).

INTELLECTUAL PROPERTY

Intellectual property will be addressed through the investment agreement between Alberta Innovates and each successful Applicant and will be specific to the circumstances of each project. However, a few general principles apply:

- Background IP (patents, copyright, software) and third-party technology remains with its original owner(s).
- Alberta Innovates does not seek ownership of new IP generated as part of this project.
- Alberta Innovates retains rights to project results, including without limitation the technical data, reports, analysis, and discussion.

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- Project outcomes, results and learning will normally be made publicly available at the conclusion of the project.

TERMS AND CONDITIONS

Alberta Innovates is governed by the *Freedom of Information and Protection of Privacy Act* (FOIP) and may be required to disclose information received under this Application, or other information delivered to Alberta Innovates in relation to a Project, when an access request is made by anyone in the public. In the event an access request is received by Alberta Innovates, exceptions to disclosure within FOIP may apply. If an exception to disclosure applies, certain information may be withheld from disclosure. Applicants are encouraged to familiarize themselves with FOIP. Information regarding FOIP can be found at <http://www.servicealberta.ca/foip/>.

All Investment determinations made by Alberta Innovates (including declining an Investment) are final, non-appealable and binding on the Applicant. Any failure to inform the Applicant of the determination regarding the EOI, within the timelines provided above will not result in any obligation or liability of Alberta Innovates to the Applicant. Alberta Innovates may also, in its sole and absolute discretion, forward to the Applicant the constructive feedback, but will not provide any information regarding an expert's personal information. Applicants are not entitled to access any information regarding the experts, including personal information, nor are they entitled to access or review the expert's recommendation.

Once an application has been evaluated and approved for funding, Alberta Innovates will require the participants to sign a standard form investment agreement. The investment agreement sets out in detail the roles, responsibilities and obligations of the various parties to ensure a successful project. Funding will not be provided until after the investment agreement is executed.

CONTACT INFORMATION

To discuss eligibility for this call for proposals, to receive an application form or for specific questions regarding this call and guide, please contact:

Vicki Lightbown, Director, Water Innovation Program

(780) 638-4343

vicki.lightbown@albertainnovates.ca

APPENDIX A

Summary of Eligible and Ineligible Expenses

Category	Eligible Expenses	Ineligible Expenses
Labour	<ul style="list-style-type: none"> ✓ Salary and benefits for individuals who are specifically working on the project 	<ul style="list-style-type: none"> ✗ Overhead costs charged to employee labour rates ✗ Professional training & development ✗ Professional fees unless directly related to the project
Materials	<ul style="list-style-type: none"> ✓ Reasonable material costs 	
Capital Assets & Software	<ul style="list-style-type: none"> ✓ Capital improvements ✓ Capital equipment ✓ Software or information databases <p><i>Note: Eligible costs will be pro-rated to the project time frame based on the asset's expected economic life</i></p>	<ul style="list-style-type: none"> ✗ Acquisitions of land or buildings ✗ The undepreciated value of eligible capital costs which extends beyond the project timeframe
Travel	<ul style="list-style-type: none"> ✓ Travel, including mileage, low economy airfare, meals and accommodation for the purposes of executing the project 	<ul style="list-style-type: none"> ✗ Passport or immigration fees ✗ Costs relating to entertainment, hospitality and gifts ✗ Reimbursement for airfare purchased with personal frequent flyer programs ✗ Commuting costs between place of residence and place of employment
Sub-contractors	<ul style="list-style-type: none"> ✓ Services or products of another entity 	<ul style="list-style-type: none"> ✗ Costs associated with applying for government grants and programs ✗ Provisions for contingencies, technical or professional journals ✗ Routine testing and maintenance
Other	<ul style="list-style-type: none"> ✓ Costs which Alberta Innovates pre-approves in writing as an eligible expense 	<ul style="list-style-type: none"> ✗ Collection charges, allowance for interest on debt, fines and penalties ✗ Federal and provincial income taxes, goods and services taxes ✗ Expenses for projects or activities outside the approved Project